



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,796	08/01/2001	Atsushi Tanaka	HITA-0073	4487

7590

09/11/2003

Stanley P. Fisher
Reed Smith Hazel & Thomas LLP
Suite 1400
3110 Fairview Park Drive
Falls Church, VA 22042-4503

EXAMINER

VITAL, PIERRE M

ART UNIT

PAPER NUMBER

2188

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/918,796

Applicant(s)

TANAKA ET AL.

Examiner

Pierre M. Vital

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 31 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed July 31, 2003 in response to PTO Office Action mailed March 31, 2003. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.

2. Claims have been presented for examination in this application. In response to the last Office Action, claims 1, 4, 7, 12, 13, 19 and 24 have been amended. No claims have been canceled. Claims 25 and 26 have been added. As a result, claims 1-26 are now pending in this application.

Drawings

3. The replacement drawings were received on July 31, 2003. These drawings are accepted.

Claim Objections

4. Claim 25 is objected to because of the following informalities:

In line 8 of the claim, it appears that "the one of OSs" should be changed to
--one of said plurality of OSs--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 6-7, 9-10, 12, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Flynn Jr. (US6,453,392).

As per claim 1, Flynn discloses a storage system wherein the system receives a command to which an ID number for identifying one of a plurality of OSs is attached *{i.e., each request includes a PGID and a VMID}* [col. 8, lines 51-57], derives said ID number *{i.e., the PGID/VMID is compared to a stored PGID/VMID}* [col. 8, lines 65-67], and returns a response that indicates whether to process or reject the access to a logical volume with said ID number attached thereto, depending on whether the one of the plurality of OSs identified by said command is authorized to access the logical volume *{i.e., if PGID/VMID of OS and PGID/VMID of storage device are not the same, access is denied}* [col. 9, lines 1-15].

As per claim 2, Flynn discloses said logical volume consists of a plurality of magnetic disk units *{i.e., DASDs}* [col. 6, lines 1-3].

As per claims 3 and 9, Flynn discloses the priority of processing for access may change according to the OS's ID number attached to said command received *{i.e., exclusive access will not be granted based on PGID and VMID comparison}* [col. 8, line 47-col. 9, line15].

As per claims 4 and 10, Flynn discloses whether to process or reject the access requested by said command received is determined, based on preset authority and said response is returned *{i.e., if PGIDs/VMIDs are not the same, access is denied; if same, access is granted}* [col. 8, line 65-col. 9, line15].

As per claim 6, Flynn discloses the system returns the response which is determined depending on combination of a plurality of types of ID numbers attached to said command received *{i.e., PGIDs and VMIDs are both compared}* [col. 9, lines 1-15].

As per claim 7, Flynn discloses a virtual private volume control method wherein servers on which a plurality of OSs run communicate with disk apparatus in such a manner that when one of said OSs on a server issues an access command, said server assign as an ID number for identifying the OS and sends the command with the assigned ID number attached thereto *{i.e., each request includes a PGID and a VMID}* [col. 8, lines 51-57]; said disk apparatus receives the sent command, derives said ID number *{i.e., the PGID/VMID is compared to a stored PGID/VMID}* [col. 8, lines 65-67], and returns a response that indicates whether to process or reject the access to a logical volume with said ID number attached thereto, depending on whether the one of the plurality of OSs identified by said command is authorized to access the logical

Art Unit: 2188

volume *{i.e., if PGID/VMID of OS and PGID/VMID of storage device are not the same, access is denied}* [col. 9, lines 1-15].

As per claim 12, Flynn discloses OS Management Software wherein when at least one of a plurality of OSs issues an access command, said software assigns an ID number for identifying the OS *{i.e., each request includes a PGID and a VMID}* [col. 8, lines 51-57]; and for using whether the OS is authorized to access a logical volume which is included in a storage system *{i.e., if PGID/VMID of OS and PGID/VMID of storage device are not the same, access is denied}* [col. 9, lines 1-15]; stores the assigned ID number into internal memory of a server *{i.e., the PGID/VMID is compared to a stored PGID/VMID}* [col. 8, lines 65-67], receives a response to which said ID number is attached and returns the response to said OS *{i.e., if PGIDs/VMIDs are not the same, access is denied}* [col. 9, lines 1-15].

As per claim 25, Flynn discloses a storage system comprising an interface which is capable to connect to a host computer which executes a plurality of OSs [*two guest OSs perform storage device operations*; col. 4, lines 2-9; col. 8, lines 30-34]; a controller connected to said interface [*storage controller 108*; Fig. 1]; a plurality of disks which is used for a logical volume [*DASDs*; col. 6, lines 1-3]; wherein said interface receives a command from one of said plurality of OSs along with an ID number for identifying the one of said plurality of OSs [*each request includes a PGID and a VMID*; col. 8, lines 51-57]; wherein said controller checks whether the one of OSs has the authority to access the

Art Unit: 2188

logical volume, and notifies to the host computer to deny the command when the one of the plurality of OSs identified by the ID number doesn't have the authority [*if PGID/VMID of OS and PGID/VMID of storage device are not the same, access is denied*; col. 9, lines 1-15].

As per claim 26, Flynn discloses a storage system further comprising a memory, wherein said controller checks the authority based on information stored in said memory [*the PGID/VMID is compared to a stored PGID/VMID*; col. 8, lines 65-67].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 11, 13-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn, Jr. (US6,453,392) and Staron et al. (US5,483,654).

As per claims 13, 19 and 24, Flynn discloses the claimed invention as detailed per claims 1, 7 and 12 above. However, although Flynn discloses the use of several IDs for processing or rejecting a request, Flynn does not specifically teach that ID numbers for identifying the application is attached as recited in the claims.

Staron discloses the use of ID numbers for identifying the application when processing a request [*registration table includes information about application program identifier*, col. 2, lines 35-42].

As per claims 5, 11, 17 and 23, Flynn discloses the claimed invention as detailed per claims 1, 7 and 12 above. However, Flynn does not specifically teach that the system includes tables in which specification of whether to process or reject the access is retained as recited in the claims.

Staron discloses that the system includes tables in which specification of whether to process or reject the access is retained [col. 5, lines 20-36].

It would have been obvious to one of ordinary skill in the art, having the teachings of Flynn and Staron before him at the time the invention was made, to modify the system of Flynn to include the use of ID numbers for identifying the application when processing a request and that the system includes tables in which specification of whether to process or reject the access is retained because it would have provided inter-application communication and invocation capability by assuring that the user/developer operates with a easy to use system that is flexible enough to allow him to perform whatever task he wishes via a selected program in whatever order he chooses [col. 2, lines 27-34] as taught by Staron.

Claim 14 is rejected as per claim 2 above.

Claim 15 and 21 is rejected as per claim 3 above.

Claim 16 and 22 is rejected as per claim 4 above.

Claim 18 is rejected as per claim 6 above.

9. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn, Jr. (US6,453,392) and Staron et al. (US5,483,654) as applied to claims 7 and 19 above, and further in view of Firoozmand (US5,488,724).

As per claims 8 and 20, Flynn and Staron disclose the claimed invention as detailed above in the previous paragraphs. However, neither Flynn nor Staron discloses coding ID numbers in a data frame and sending the data frame as a command as recited in the claims.

Firoozmand discloses coding ID numbers in a data frame and sending the data frame as a command [see Abstract; col. 20, lines 8-13].

It would have been obvious to one of ordinary skill in the art, having the teachings of Flynn and Staron and Firoozmand before him at the time the invention was made, to modify the system of Flynn and Ault to include coding ID numbers in a data frame and sending the data frame as a command because it would have optimized storage of framed data by maintaining synchronization between frames of data and their corresponding headers as taught by Firoozmand.

Response to Arguments

10. Applicant's arguments filed July 31, 2003 have been fully considered but they are not persuasive. As to the remarks, applicant asserted that:

(a) Flynn does not teach one of the plurality of OSs identified by said command is authorized to access the logical volume.

Examiner respectfully traverses applicant's arguments for the following reasons.

Examiner would like to point out that Flynn uses PGID/VMID associated with the OSs and compares them to PGIDs/VMIDs previously stored to determine whether to grant or deny access as detailed in column 9, lines 1-15. Thus, it can be clearly seen that Flynn discloses one of the plurality of OSs identified by said command is authorized to access the logical volume as claimed by applicant.

(b) Firoozmand discloses different technologies.

In response to applicant's argument that Firoozmand is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Firoozmand uses the code to read access data from memory.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111 (c) to consider these references fully when responding to this action. The documents cited therein teach processing or rejecting Operating System commands based on ID assigned to Operating System.

Art Unit: 2188

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (703) 306-5839. The examiner can normally be reached on Mon-Fri, 8:30 am - 6:00 pm, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.



Pierre M. Vital
September 7, 2003